Claims

- Use of one inhibitor or of several inhibitors of alanyl aminopeptidases and/or
 of enzymes having a similar substrate specificity for the induction of the production of TGF-β1 and of the expression of TGF-β1 in and/or on Treg cells.
- 2. The use according to claim 1, wherein the one inhibitor or the several inhibitors of alanyl aminopeptidases and/or of enzymes having a similar substrate specificity is/are at least one member selected from the group consisting of actinonin, leuhistin, phebestin, amastatin, bestatin, probestin, arphamenin, MR 387, β-amino thiols, α-amino phosphinic acids and their esters and their salts, α-amino phosphonates, α-amino boronic acids, α-amino aldehydes, hydroxamates of α-amino acids, N-phenyl phthalimides, N-phenyl homophthalimides, α-ketoamides, thalidomide and its derivatives.
- 3. The use according to claim 2, wherein, as the one inhibitor or the several inhibitors, α-ketoamides, preferably 3-amino-2-oxo-4-phenylbutanoic acid amides, α-amino phosphinic acids, preferably D-Phe-γ[PO(OH)-CH₂]-Phe-Phe, N-phenyl homophthalimides, preferably PAQ-22, α-amino phosphonates, preferably RB3014 and/or phebestin, particularly preferably PAQ-22, RB3014 and/or phebestin is/are used.
- 4. The use according to any of the claims 1 to 3, wherein cytosolic alanyl aminopeptidase serves as the enzyme having a similar substrate specificity.
- 5. The use according to claim 4, wherein PAQ-22 is used as the one inhibitor or wherein the several inhibitors comprise PAQ-22.

- Use of one inhibitor or of several inhibitors of alanyl aminopeptidases and or
 of enzymes having a similar substrate specificity for preventing and/or treating autoimmune diseases.
- 7. The use according to claim 6 for preventing and/or treating rheumatoid arthritis, Lupus Erythematodes, multiple sclerosis, IDDM, Morbus Crohn, Colitis Ulcerosa, psoriasis, neurodermatosis, glomerulonephritis, interstitial nephritis, vasculitis, autoimmune diseases of the thyroid gland, autoimmune-hemolytic anemia or other chronic diseases having an inflammatory genesis as, for example, arteriosclerosis.
- 8. The use according to claims 6 or 7 for preventing and/or treating multiple sclerosis or arteriosclerosis.
- 9. Use of one inhibitor or of several inhibitors of alanyl aminopeptidases and or of enzymes having a similar substrate specificity for preventing and/or treating allergies of the type I (according to Gell and Coombs), hay fever or allergies of the type II, III or IV.
- 10. The use according to claim 9 for preventing and/or treating bronchial asthma or hay fever as allergies of the type I (according to Gell and Coombs) and/or contact allergies as allergies of the types II, III or IV.
- 11. Use of one inhibitor or of several inhibitors of alanyl aminopeptidases and or of enzymes having a similar substrate specificity for suppressing graft rejection reactions.
- 12. The use according to claim 11 in transplantations of kidneys or bone marrow.

- 13. The use according to any of the claims 6 to 12, wherein the one inhibitor or the several inhibitors of alanyl aminopeptidases and/or of enzymes having a similar substrate specificity is/are at least one member selected from the group consisting of actinonin, leuhistin, phebestin, amastatin, bestatin, probestin, arphamenin, MR 387, β -amino thiols, α -amino phosphinic acids and their esters and their salts, α -amino phosphonates, α -amino boronic acids, α -amino aldehydes, hydroxamates of α -amino acids, N-phenyl phthalimides, N-phenyl homophthalimides, α -ketoamides, thalidomide and its derivatives.
- 14. The use according to claim 13, wherein, as the one inhibitor or the several inhibitors, α-ketoamides, preferably 3-amino-2-oxo-4-phenylbutanoic acid amides, α-amino phosphinic acids, preferably D-Phe-γ[PO(OH)-CH₂]-Phe-Phe, N-phenyl homophthalimides, preferably PAQ-22, α-amino phosphonates, preferably RB3014 and/or phebestin, particularly preferably PAQ-22, RB3014 and/or phebestin is/are used.
- 15. The use according to any of the claims 6 to 14, wherein cytosolic alanyl aminopeptidase serves as the enzyme having a similar substrate specificity.
- 16. The use according to claim 15, wherein PAQ-22 is used as the one inhibitor or wherein the several inhibitors comprise PAQ-22.
- 17. The use according to any of the claims 1 to 16, wherein peptide fragments of pathogenic autoantigens or synthetic analogs and/or specific antigenic components of pathogenic microorganisms are used in addition.
- 18. The use of claim 17, wherein MBP (myelin basic protein), MOG (myelin oligo-dendrocyte glycoprotein), MAG (myelin-associated glycoprotein) and/or PLP (proteolipid protein) are used as peptide fragments of pathogenic autoantigens.

- 19. The use according to claim 17 or claim 18, wherein sheath proteins or membrane glycolipide complexes are used as specific antigenic components of pathogenic microorganisms.
- 20. Use of one inhibitor or of several inhibitors of alanyl aminopeptidases and/or of enzymes having a similar substrate specificity for the preparation of a medicament or of a pharmaceutical preparation for the induction of the production of TGF-β1 and of the expression of TGF-β1 in and/or on Treg cells.
- 21. The use according to claim 20, wherein the one inhibitor or the several inhibitors of alanyl aminopeptidases and/or of enzymes having a similar substrate specificity is/are at least one member selected from the group consisting of actinonin, leuhistin, phebestin, amastatin, bestatin, probestin, arphamenin, MR 387, β -amino thiols, α -amino phosphinic acids and their esters and their salts, α -amino phosphonates, α -amino boronic acids, α -amino aldehydes, hydroxamates of α -amino acids, N-phenyl phthalimides, N-phenyl homophthalimides, α -ketoamides, thalidomide and its derivatives.
- 22. The use according to claim 21, wherein, as the one inhibitor or the several inhibitors, α-ketoamides, preferably 3-amino-2-oxo-4-phenylbutanoic acid amides, α-amino phosphinic acids, preferably D-Phe-γ[PO(OH)-CH₂]-Phe-Phe, N-phenyl homophthalimides, preferably PAQ-22, α-amino phosphonates, preferably RB3014 and/or phebestin, particularly preferably PAQ-22, RB3014 and/or phebestin is/are used.
- 23. The use according to any of the claims 20 to 22, wherein cytosolic alanyl aminopeptidase serves as the enzyme having a similar substrate specificity.
- 24. The use according to claim 23, wherein PAQ-22 is used as the one inhibitor or wherein the several inhibitors comprise PAQ-22.

- 25. Use of one inhibitor or of several inhibitors of alanyl aminopeptidases and or of enzymes having a similar substrate specificity for the preparation of a medicament or of a pharmaceutical preparation for preventing and/or treating autoimmune diseases.
- 26. The use according to claim 25 for preventing and/or treating rheumatoid arthritis, Lupus Erythematodes, multiple sclerosis, IDDM, Morbus Crohn, Colitis Ulcerosa, psoriasis, neurodermatosis, glomerulonephritis, interstitial nephritis, vasculitis, autoimmune diseases of the thyroid gland, autoimmune-hemolytic anemia or other chronic diseases having an inflammatory genesis as, for example, arteriosclerosis.
- 27. The use according to claim 25 or claim 26 for preventing and/or treating multiple sclerosis or arteriosclerosis.
- 28. Use of one inhibitor or of several inhibitors of alanyl aminopeptidases and/or of enzymes having a similar substrate specificity for the preparation of a medicament or of a pharmaceutical composition for preventing and/or treating allergies of the type I (according to Gell and Coombs), hay fever or allergies of the type II, III or IV.
- 29. The use according to claim 28 for preventing and/or treating bronchial asthma or hay fever as allergies of the type I (according to Gell and Coombs) and/or contact allergies as allergies of the types II, III or IV.
- 30. Use of one inhibitor or of several inhibitors of alanyl aminopeptidases and or of enzymes having a similar substrate specificity for the preparation of a medicament or of a pharmaceutical preparation for suppressing graft rejection reactions.

- 31. The use according to claim 30 for transplantations of kidneys or bone marrow.
- 32. The use according to any of the claims 25 to 31, wherein the one inhibitor or the several inhibitors of alanyl aminopeptidases and/or of enzymes having a similar substrate specificity is/are at least one member selected from the group consisting of actinonin, leuhistin, phebestin, amastatin, bestatin, probestin, arphamenin, MR 387, β -amino thiols, α -amino phosphinic acids and their esters and their salts, α -amino phosphonates, α -amino boronic acids, α -amino aldehydes, hydroxamates of α -amino acids, N-phenyl phthalimides, N-phenyl homophthalimides, α -ketoamides, thalidomide and its derivatives.
- 33. The use according to claim 32, wherein, as the one inhibitor or the several inhibitors, α-ketoamides, preferably 3-amino-2-oxo-4-phenylbutanoic acid amides, α-amino phosphinic acids, preferably D-Phe-γ[PO(OH)-CH₂]-Phe-Phe, N-phenyl homophthalimides, preferably PAQ-22, α-amino phosphonates, preferably RB3014 and/or phebestin, particularly preferably PAQ-22, RB3014 and/or phebestin is/are used.
- 34. The use according to any of the claims 25 to 33, wherein cytosolic alanyl aminopeptidase serves as the enzyme having a similar substrate specificity.
- 35. The use according to claim 34, wherein PAQ-22 is used as the one inhibitor or wherein the several inhibitors comprise PAQ-22.
- 36. The use according to any of the claims 20 to 35, wherein peptide fragments of pathogenic autoantigens or synthetic analogs and/or specific antigenic components of pathogenic microorganisms are used in addition.

- 37. The use according to claim 36, wherein MBP (myelin basic protein), MOG (myelin oligo-dendrocyte glycoprotein), MAG (myelin-associated glycoprotein) and PLP (proteolipid protein) are used as peptide fragments of pathogenic autoantigens.
- 38. The use according to claim 36 or claim 37, wherein sheath proteins or membrane glycolipide complexes are used as specific antigenic components of pathogenic microorganisms.
- 39. Pharmaceutical preparation, comprising one inhibitor or of several inhibitors of alanyl aminopeptidases and/or of enzymes having a similar substrate specificity as well as one or several pharmacologically unobjectionable carrier, additive and/or auxiliary substance(s).
- 40. Pharmaceutical preparation, comprising one inhibitor or several inhibitors of alanyl aminopeptidases and/or of enzymes having a similar substrate specificity and peptide fragments of pathogenic autoantigens or synthetic analogs and/or specific antigenic components of pathogenic microorganisms as well as one or several pharmacologically unobjectionable carrier, additive and/or auxiliary substance(s).